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(54) SEED POTS AND CONTAINERS THEREFOR

(71) We, LESLIE ROBERT HITE, a British subject, of 11 Courtney Way, Cambridge, and LUCY ENID LOWE, a British subject, of 16 Haverhill Road, Stapleford, Cambridgeshire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a horticultural appliance for the raising of garden plants, particularly but not exclusively, from seed.

Many country dwellers (and even town-dwellers) enjoy having a small garden in which they "bed-out" annual plants which either have to be bought from a nursery garden, or are grown by themselves, in their houses,—often from seed—in spite of inadequate facilities therefor. They and town dwellers also enjoy having plants in pots.

Broadly speaking there are three major stages with which such gardeners are faced up to and including the bedding-out stage, being respectively, the sowing of the seed in containers suitable for having in the house, under appropriate conditions of light and warmth; secondly, often, a distinct further stage of pricking out the seedlings into another container and bringing on the individual seedlings to the final bedding-out stage or at any potting-up stage; and the selection and separation of such seedlings for final bedding-out or potting-up operation.

During the aforesaid growth stages there is always the problem of watering, and several attempts have been made to try and obtain the automatic supply of water according to demand with some degree of success.

A main factor which limits such work is that of space, as the normal seed boxes are not very suitable for use in a house, while the pricking out for outdoors involves more such boxes. Also, the operations of separating, pricking out and bedding-out or potting-up for the house or outdoors, involve some inevitable risk of damage to the tender root formations of the seedlings.

The object of the present invention is a new horticultural device to assist the country (or town) dweller in growing his own bedding-out plants in the house in spite of the problems and limitations aforesaid.

Accordingly, this invention provides a seed pot comprising:

a container portion, which container portion has a base, with a hole passing therethrough, and walls upstanding from the perimeter of the base; and

a separate stem portion, which stem portion is a rigid tube adapted to fit loosely within the hole in the base of the container portion, which tube is flanged and open at one end, has a hole or holes at or near the other end, and contains a water-absorbent material, the flange having substantially the same peripheral shape and size as the base of the container portion; such that in use the non-flanged end of the tube of the stem portion is inserted through the hole in the base of the container portion from within the container portion, and depends therefrom, and, when the non-flanged end of the stem portion is placed in water, water will be absorbed by the absorbent material in the tube, and will pass along the stem to the other end thereof within the container portion.

Such a seed pot can be set in a water container with the stem portion immersed in the water such that water will be drawn up into the container portion to provide adequate moisture to soil therein for a seed or plant growing in the soil. Thus, the seed or plant is provided with a continuous supply of water from below with great ease since the only requirement is to top up the water level in the water container from time to time. When the plant has reached a size sufficient for replanting, the plant together with the soil in the container portion can easily be ejected by pushing the stem portion up from below so that the flange acts on the compacted soil to eject it from the container portion without significantly affecting the root complex of the growing plant. To aid in ejection, it is helpful for the container portion to be slightly divergent from the base to the top thereof.

The flange of the stem portion may be

substantially flat, but it is preferred that it be conical, so that the stem portion as a whole (that is, the tube and the flange) is in form of a funnel (as shown in Figure 4 and described hereinafter). The base of the container portion ideally incorporates a number of small additional holes for aeration purposes, and also to allow the flange to move away when soil in the container portion is being ejected without a reduced pressure zone being formed between the flange and base.

The invention also extends to the combination of a number of seed pots, as hereinbefore defined, set in separate compartments of a water container having an upper framework providing a series of holes, each adapted to hold one of the seed pots so that the stem portion thereof depends into the water container. The water container can be provided with a cover to be situated above the framework for maintaining desired conditions surrounding the seed pots and, if desired, heating means may be employed in the water container.

In order that the invention may be more fully understood, a preferred embodiment thereof will now be described, by way of illustration only, with reference to the accompanying drawings, in which:—

Figure 1 is a plan view of a water container for use in connection with the invention;

Figure 2 is a vertical cross-section on line II-II of the container of Figure 1 with seed pots and a cover member inserted therein;

Figure 3 is an underneath perspective view of one of the seed pots shown in Figure 2; and

Figure 4 is a vertical cross-section through the seed pot shown in Figure 3.

The whole appliance as shown in the drawings is made of a suitably rigid plastics material and the water container 10 shown in Figures 1 and 2 is rectangular and carries a support frame 11 with rectangular holes for twenty-four rectangular seed pots 12 in the bottom of each of which is carried a secondary container 13 of tapered funnel-like shape opening with a wide mouth at the head 14 (as shown in Figure 4) and closed at its lower end except for holes 15 for the admission of water. Aeration holes 16 are also provided in the base 17 of each pot 12 (Figure 3). The individual pots are adapted to be loaded as an assembly into the supporting frame 11, on which their bases 17 rest so that they can be individually loaded into, or removed from, such frame. The overall dimensions of the particular example illustrated are approximately $14^1/_2$ inches by 9 inches by $6^1/_2$ inches in height, suitable for location on a windowsill or small table. A cover 18 of similar rigid transparent plastics material is provided. The individual pots can be transparent so that the progress of root growth can be seen but if it is found to be undesirable for such root growth to be subjected to light, then the water container can be made of suitably opaque material. Clear or shaded colours may be provided and used as required and these may be interchangeable.

In use, the funnel-like end of each stem portion 13 (as shown in Figure 4) is filled with water-absorbent or water-holding material 19 such as sand or fine gravel or a fibrous filling which will operate as a wick. The upper or main plant-growing part 12 of the pot will hold and is filled with about 4 cubic inches of suitable growing compost (comprising a main layer 20 of potting compost and a top layer 21 of seed compost) in which may be placed a pelletted seed, or on which a few seed may be sown, as when handling an ordinary gardener's seed box. Such seed can be scattered over the assembly of pots, as one would on a seed box, or individually on the compost in each pot.

The pots are kept watered by keeping water up to a suitable level in the water container 10, which level may be suitably indicated thereon. Such water rises through the small holes 15 in the bottom of the funnel-shaped part to wet the water-absorbent or water-holding material 19. Germination and growth can be watched, as with an ordinary seed box, and thinning out effected as required. When the plants are ready for bedding-out, the ground may be suitably prepared to receive them and a rectangular hole made therein for each young plant. The plants can be removed from each individual pot, substantially without disturbing its root formation, by using the lower funnel-shaped part 13 with its flanged head 14, as a piston to eject the growing compost and root formation as a core which can be placed straight into the prepared hole in the ground. In this way there is a minimum effect of growth check caused by, and usually attendant with, the normal bedding-out operation. The pots may then be cleaned and put away or recharged for growing the next lot of bedding-out plants. In some cases the plants may be grown for potting up for use in the house and the apparatus can also be used for taking cuttings.

The advantages of this method of growing plants are:—

(a) Root disturbance and damage is kept to an absolute minimum.

(b) The tedious job of "pricking out" seedlings can be eliminated.

(c) Plants can be planted out into correctly shaped holes prepared by "dibbing" rather than digging (i.e. one straight push on a suitable tool with a

foot or hand instead of kneeling down and digging with a trowel).

(d) Due to the compact design of the containers, 24 plants can be grown on a plastics frame approximately 15" × 9" suspended over a plastics tray containing water. This will allow people without greenhouses to raise plants without fuss or bother, on their window sills.

(e) The self-watering device ensures that the plants receive adequate water from the plastic tray. This eliminates top-watering with its attendant dangers or the tedious task of placing ordinary seed trays in water. It also means that windowsill gardening is possible without any mess.

(f) This method of growing plants makes full use of pelletted seeds now becoming readily available.

(g) Fitting of suitable heating elements to the plastics water trays allows one to obtain the warm temperatures that some seeds need for germation.

(h) This system of raising seeds will also allow disabled and elderly people to take an active interest in gardening, a subject that the "Disabled Living Foundation" is actively pursuing at the present time.

The invention is obviously not limited to all the details shown in, or described with reference to, the drawings. For instance, though with some loss of space, the individual pots may be made hexagonal in cross-section or even round and the upper or main part of each pot and the supporting frame constructed accordingly. The pots could of course be made of clay or any other suitable material. Also, of course, the container 10, support frame 11 and seed pots 12 can be made in varying sizes to suit various requirements.

To ensure a more secure seating of the pots 12 in the support frame, the base 17 of the pots may with advantage be provided with a downwardly stepped central portion which will fit into a hole in the support frame 11. The holes 16 in the base are then best situated in the flat base of the stepped portion. A simple alternative form of support frame can be provided as a wire mesh framework (1" × 1" × 16 S.W.G. plastics coated galvanised wire) which extends down at the front and back, so that the framework can stand within the water container 10 with the horizontal part of the framework raised above the base thereof. A simplified, but effective, alternative to the cover 18 may be provided by a transparent (or opaque if desired) bag of plastics material which is held above the pots 12 by means of inverted U-shaped brackets which are inserted into the soil of the pots at the corners of the support frame.

WHAT WE CLAIM IS:—

1. A seed pot comprising:

a container portion, which container portion has a base, with a hole passing therethrough, and walls upstanding from the perimeter of the base; and

a separate stem portion, which stem portion is a rigid tube adapted to fit loosely within the hole in the base of the container portion, which tube is flanged and open at one end, has a hole or holes at or near the other end, and contains a water-absorbent material, the flange having substantially the same peripheral shape and size as the base of the container portion; such that in use the non-flanged end of the tube of the stem portion is inserted through the hole in the base of the container portion from within the container portion, and depends therefrom, and, when the non-flanged end of the stem portion is placed in water, water will be absorbed by the absorbent material in the tube, and will pass along the stem to the other end thereof within the container portion.

2. A seed pot as claimed in claim 1, wherein the stem portion is in the form of a funnel.

3. A seed pot as claimed in either of the preceding claims, wherein the base of the container portion incorporates a number of small additional holes.

4. A seed pot as claimed in any of the preceding claims, wherein the base of the container portion has a downwardly stepped central portion.

5. A seed pot as claimed in any of the preceding claims, wherein the walls of the container portion are slightly divergent from the base to the top thereof.

6. A seed pot as claimed in any of the preceding claims and substantially as hereinbefore described with reference to Figures 3 and 4 of the accompanying drawings.

7. A combination of a plurality of seed pots, as claimed in any of the preceding claims, set in separate compartments of a water container having an upper framework provided with a series of holes, each hole being adapted to hold one of the seed pots so that the stem portion thereof depends into the water container.

8. A combination as claimed in claim 7, wherein the support frame is a wire mesh framework which extends downwardly at opposed sides within the water container.

9. A combination as claimed in either of claims 7 and 8, which additionally comprises a cover to be situated above said framework.

10. A combination as claimed in claim 9, wherein said cover comprises a bag formed

from a plastics material and supported by two inverted U-shaped brackets.

11. A combination as claimed in any of claims 7 to 10, which additionally incorporates heating means within the water container.

12. A combination as claimed in any of claims 7 to 11 and substantially as herein described with reference to Figures 1 and 2 of the accompanying drawings.

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Sheet 1

FIG.1

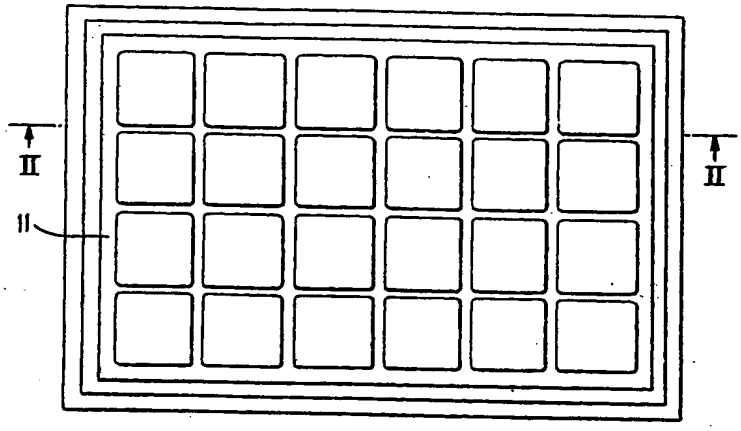
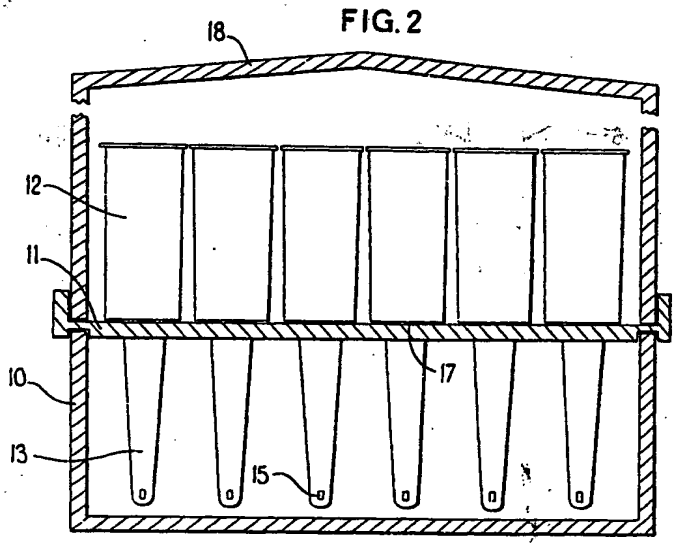


FIG.2



1316159 COMPLETE SPECIFICATION
2 SHEETS *This drawing is a reproduction of the Original on a reduced scale*
Sheet 2

FIG.3

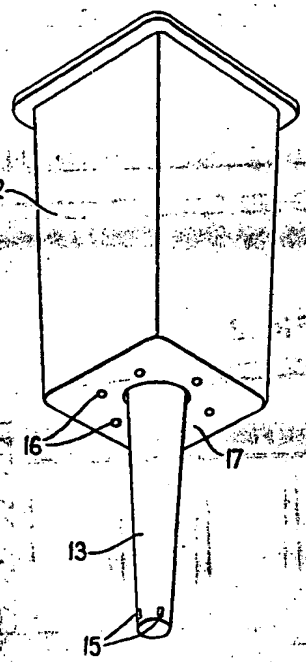


FIG.4